Westend Regional Sewage Services Commision

Westend Sanitary Trunkmain Relocation Design Summary

URBAN systems

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Background

- Damage to the existing sanitary forcemain during the June 2013 floods
- Relocation was recommended
- This presentation outlines the detailed design of the realignment

Proposed System: Lift Stations

Turner Valley (TV) Lift Station

- Will not modify existing TV Lift Station
- Future upgrades to the TV Lift Station will be required
- Existing forcemain from TV to Riverwood Estates will remain

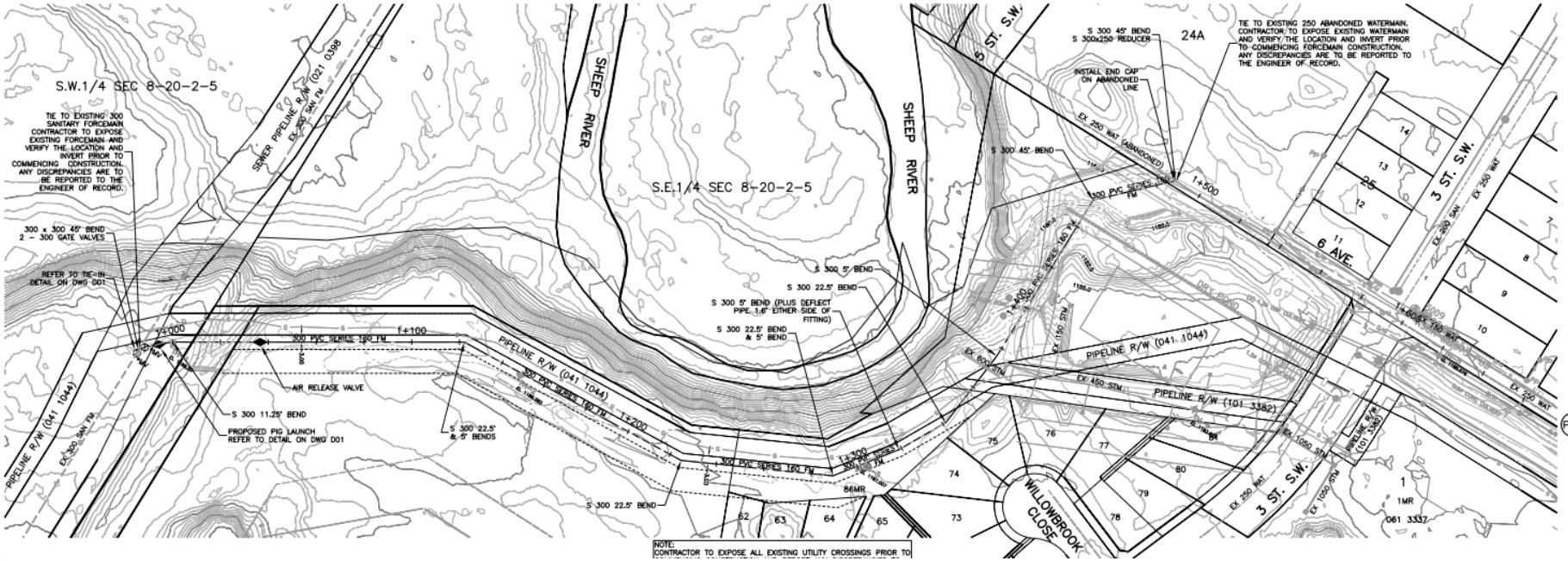
Tuner Valley Golf & Country Club (GC) Lift Station

- Not required for current flows

Proposed System: Forcemain

- Connects to existing TV forcemain at NW corner of Riverwood development
- Utilizes existing abandoned watermain under 6th Ave SW
- Recent construction at 6th Ave & 2nd St by Riverwood changed planned design
- Crosses Hwy 22 in watermain and continues along north side of Jaygee Farms
- Terminates at proposed manhole between Maplewood Way and Emerald Way

Proposed System: Forcemain



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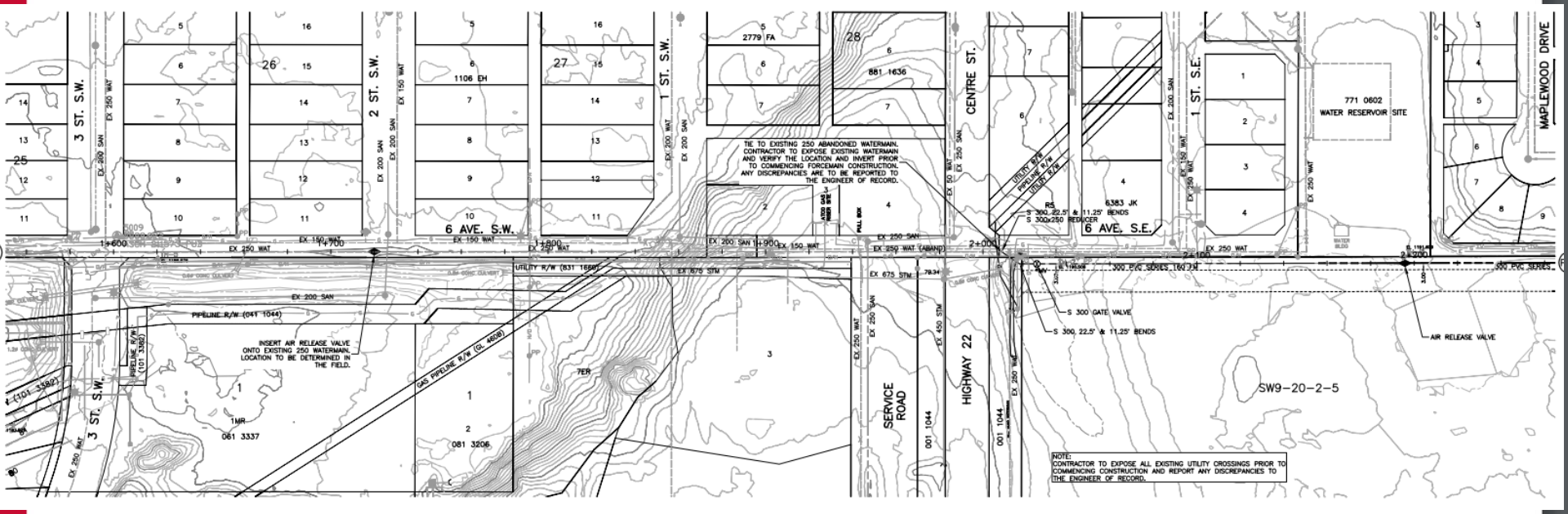
Proposed System: Forcemain



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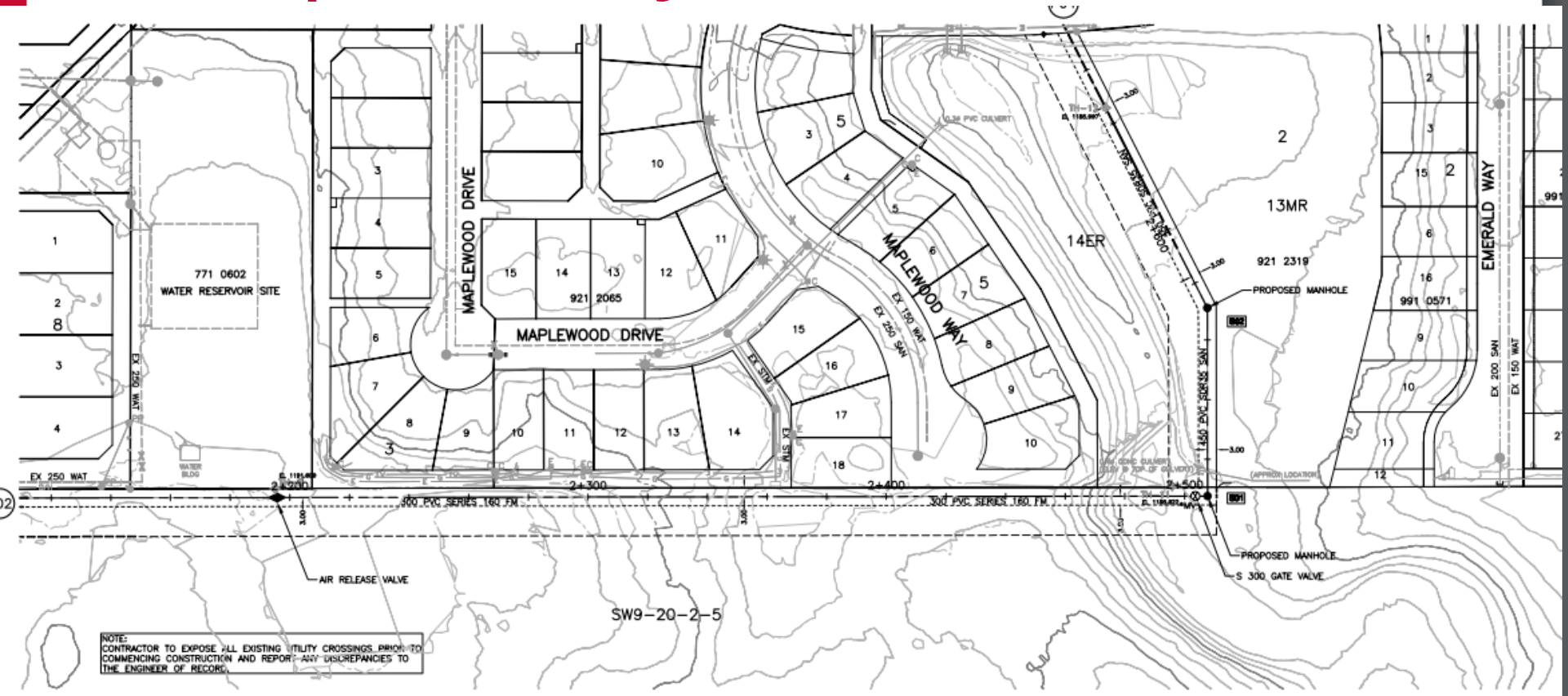
Proposed System: Forcemain



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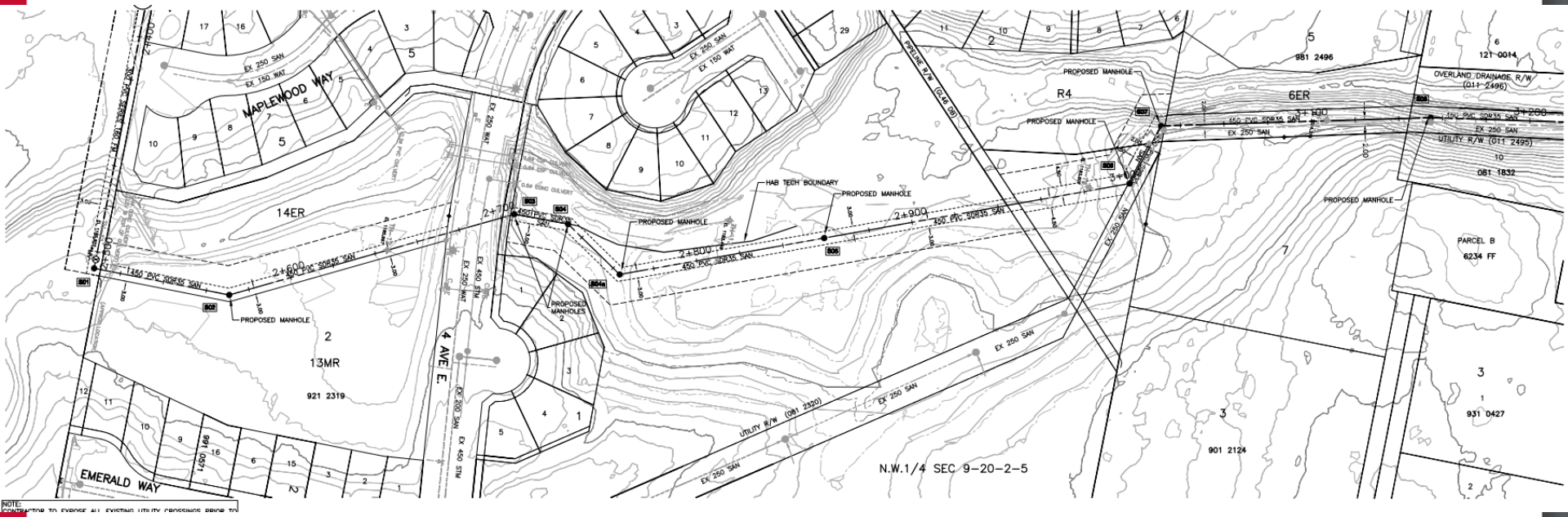
Proposed System: Gravity Main

- Begins at manhole where forcemain terminates
- Continues north crossing MR/ER, 4th Ave, NJV Developments, and meets up with existing BD sanitary main R/W
- Jogs to avoid environmentally sensitive area
- Requires two interconnections to existing sanitary main. One for hydraulic reasons and the other for constructability reasons.
- Terminates at existing transfer station. In the future it will terminate at future transfer station.
- Emergency overflow to lagoons maintained

Proposed System: Gravity Main



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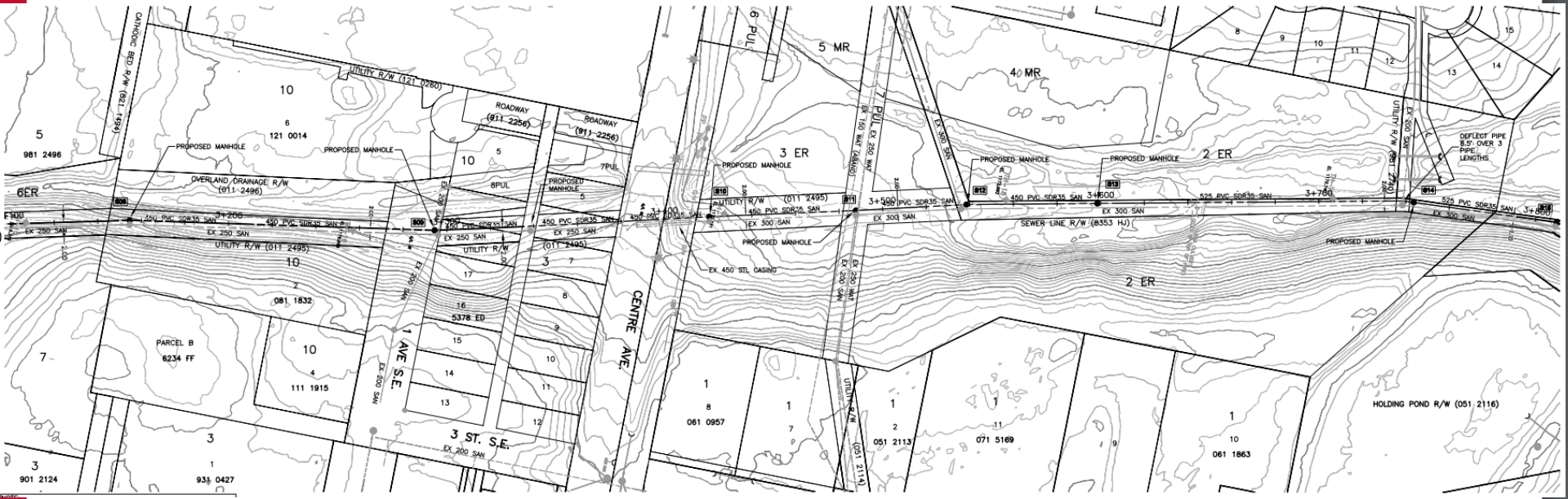

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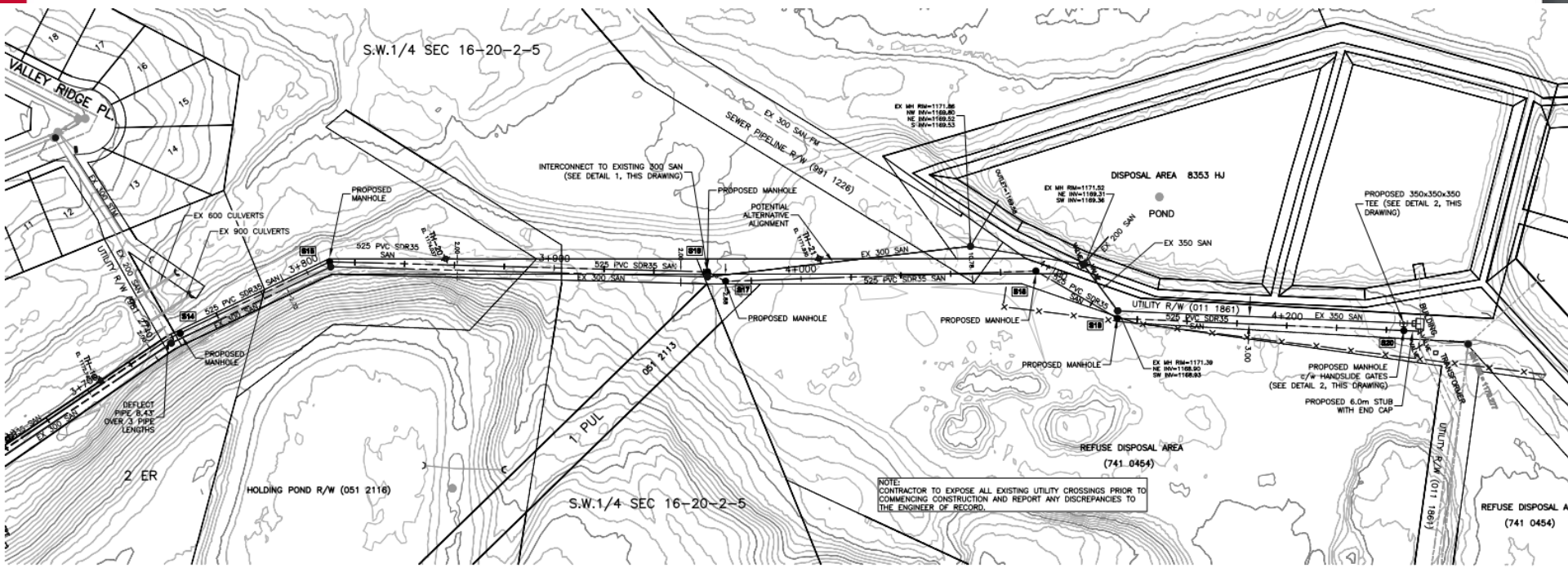

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Hydraulics

- Assuming 16,000 people within 30-50 years, as per IMDP
- Pump upgrades at Turner Valley required once flows reach 71 L/s
- 300mm forcemain is sufficient
- Able to use existing abandoned water main under 6th Ave SW
- Twinning existing 300mm gravity line with a 450mm and 575mm gravity line is required
- Interconnection of proposed and existing lines recommended at this time
- Interconnection before entering the existing transfer station also recommended
- Existing transfer station will need to be upgraded, but is able to handle current flows
- Outlet invert to transfer station set based on the high water level of the adjacent lagoon

Constructability

Geotechnical

- Shallow geotechnical investigation completed
  - Unsuitable material may be encountered
  - High water level may be encountered
  - Bedrock may be encountered in some areas
- Slope stability assessment completed
  - No concerns identified

Contamination

- Field observations did not indicate the presence of contamination at borehole locations
- Recommended that a qualified individual visit the site periodically during construction

Constructability

Environmental

- Ecological sensitivity overview completed
- 3% of the original alignment transected two habits of concern
- Alignment was modified to avoid these areas

Historical Resources Overview compelted

- Alberta Culture approved the project

Cost Estimate

Capital Cost including Contingency	$2,090,630
Land Acquisition Estimate	$15,000
Engineering & Specialist Consultants (20%)	$421,000
Total (plus GST)	$2,526,630

*Original estimate was $2,900,000

Schedule

- Recommended that the project is tendered in February 2015
- Recommended that construction completion be set in mid-September 2015
  - Restrict site days to reduce consultant inspection costs
  - Allow contractor to pick start date as early as May

Conclusions & Recommendations

- Current design be accepted and approved for tendering in February 2015
- Submit design to AESRD with a code of practice notification
- Urban Systems will provide a work program proposal for tendering and construction services for approval from WRSSC